

MEGADOLOMEDES NOV. GEN. (ARANEAE: PISAURIDAE)
WITH A DESCRIPTION OF THE MALE OF THE TYPE-SPECIES,
DOLOMEDES AUSTRALIANUS KOCH 1865

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ABSTRACT

Males of this east Australian water spider are described for the first time. They show differences from *Dolomedes* which warrant the establishment of a new genus, *Megadolomedes*. *Megadolomedes* has very long legs with long, flexible tarsi. The male is very much smaller than the female and the palpal organ differs essentially from that of *Dolomedes* in having a well developed club-shaped apophysis at the base of the fulcrum. The epigyne and variations of pattern in the female are illustrated and some notes on the biology given.

Dolomedes australianus Koch 1865, *D. cervinus* Koch 1876, and *D. trux* Lamb 1911 are considered synonyms of *Megadolomedes australianus*.

Dolomedes australianus was described by Koch (1865) from an immature female from New South Wales. Later (1876) he described the mature female. The spider is found along the waterways of the east coast of Australia from Tasmania to Cape York and has been collected on Prince Edward Island in Torres Strait. The females are large spiders with body lengths varying from 20 to 30 mm and with leg spans up to 150 mm or more. The male is very much smaller with a leg span of less than 60 mm. Because of its long legs and flexible tarsi the spider bears a striking superficial resemblance to the Neotropical genus, *Trechalea*. Measurements were made with an ocular micrometer and converted to millimetres.

Abbreviations: AM, Australian Museum, Sydney; HZMI, Zoologisches Staatinstitut und Zoologisches Museum, Hamburg; QM, Queensland Museum, Brisbane. AME, ALE, PME, PLE, anterior median, anterior lateral, posterior median, posterior lateral eyes; MOQ, median ocular quadrangle.

Megadolomedes nov. gen.

Large spiders with long legs and flexible tarsi only a little shorter than metatarsi. Eyes in two recurved rows, anterior row much narrower than posterior, AME slightly larger than ALE. Retromargin of cheliceral furrow with 4 large, subequal teeth; promargin with 3 teeth, distal minute, middle largest, proximal intermediate in size. 7 spines on dorsal femur of pedipalp. Legs

4(12) 3. Superior lorum of pedicel composed of 4 sclerites, 2 median and 2 lateral. Male much smaller than female, with short palpal tibia bearing medial retrolateral apophysis. Cymbium long and slender with non-excavated distal region. Embolus very long; fulcrum well developed with a flat club-shaped apophysis basally.

Megadolomedes can be distinguished from *Dolomedes* by the characters listed in Table 1.

TYPE-SPECIES: *Dolomedes australianus* Koch 1865, the only species known for this genus.

TABLE 1: DIFFERENCES BETWEEN MEGADOLOMEDES AND DOLOMEDES.

	<i>Megadolomedes</i>	<i>Dolomedes</i>
tarsi	flexible; more than $\frac{1}{2}$ length of metatarsi	not flexible; barely $\frac{1}{2}$ length metatarsi
male	much smaller than ♀	about the same size, slightly smaller
cymbium	long, slender; excavated proximally, flat distally	excavated for most of length; conical distally
lateral sub-terminal apophysis	flat and club-shaped	absent

Megadolomedes australianus (Koch)

Dolomedes australianus Koch, 1865, p. 863; 1876, p. 873.

Dolomedes cervinus Koch, 1876, p. 872.

Dolomedes trux Lamb, 1911, p. 173. Rainbow, 1912, p. 210.

MATERIAL EXAMINED

Cedar Creek Falls, Mt Nebo, near Brisbane, SE.Q., R. Raven, 16.xi.1973, 1 ♂, QM S230; Home Rule, near Helenvale, NE.Q., V. Davies, D. Joffe, 19.xi.1974, 2 ♂, QM S231; *Dolomedes australianus*, id. L. Koch, 1876, Wollongong, N.S.W., 1 ♀, HZMI, Mus. Godeffroy 302; *Dolomedes trux*, holotype, Ithaca Creek, Brisbane, SE.Q., J. Lamb, 1 penultimate ♀, QM G55; *Dolomedes trux* id. W.J. Rainbow 1912, Blackall Ranges, SE.Q., C.J. Wild, 1 juvenile, QM W2146; Pennant Hills, N.S.W., 10.viii.1953, 1 penultimate ♀, AM; Richmond Range, N.S.W., R. Raven, 14.ix.1974, 1 penultimate ♀, QM S232, Home Rule, NE.Q., V. Davies, D. Joffe, 18.xi.1974, 1 ♀, QM S233, *ibid.*, 19.xi.1974, 2 ♀, QM S234; Davies Creek, Mareeba, NE.Q., N.C. Coleman, 30.iii.1975, 1 ♀, QM S235; Mount Molloy, N.E.Q., F. Little, ix.1969, 1 ♀, QM S236; Booloomba, Kenilworth State Forest, SE.Q., R. Raven, ii.1973, 2 ♀, QM S237; Kondalilla National Park, SE.Q., R. Raven, 10.xii.1973, 2 ♀, QM S238; Goodna reach, Brisbane River, SE.Q., R. Monroe, 13.v.75, 1 ♀, QM S239; Beerburum, SE.Q., G.J. Male, 1 ♀, QM S240; Little Yabba Creek, Kenilworth State Forest, SE.Q., G. May, 1 ♀, QM S241; East branch Kilcoy Creek, SE.Q., K.R. McDonald, 1 ♀, QM S242; Scrubby Creek, near Eden, N.S.W., 13.xii.1971, 1 ♀, AM.

DESCRIPTION

MALE (QM S230): Carapace length 4.48, width 3.68. Abdomen length 4.20, width 2.28. Legs 4(12)3 (Table 2). Colour (in alcohol) of carapace, legs and chelicerae yellow brown. Dorsal abdomen light brown with anterior median brown rectangular marking to about half the length of the abdomen, irregular darker areas behind. Carapace lightly covered with short brown simple hairs. Fovea length 0.25 × length of carapace, lateral striae present. Clypeus twice the longest diameter of an anterior median eye (Fig. 1). Ratio of eyes AME:ALE:PME:PLE is 8:7:14:15. MOQ width at front: width at back: length is 21:35:33. Maxillae longer than wide, 35:14 and broadest distally. Labium about as long as wide 30:27 constricted at base and rounded distally. Sternum shield-shaped, as long as wide, pointed posteriorly. Tarsi very long, curved and flexible with transverse striations, no scopula (Plate 1, C). Superior claws similar with 7–8 long teeth (Plate 1, D); inferior claw smooth and short.

TABLE 2: LEG MEASUREMENTS (MM) OF ♂
MEGADOLOMEDES AUSTRALIANUS

	I	II	III	IV	Palp
Femur	6.13	6.44	5.44	7.00	2.63
Patella	1.88	2.19	1.75	1.94	0.88
Tibia	5.94	5.94	4.38	5.94	0.88
Metatarsus	6.25	5.88	4.75	6.88	—
Tarsus	5.13	4.83	3.50	5.13	3.75
Total	25.33	25.28	19.82	26.89	8.14

Notation of spines, First leg: Femur, p.1.1.1.1.1.d.1.0.1.0.1.r.1.1.1.1.1. Patella, p.1.d.1.r.1. Tibia, p.0.1.0.1.d.0.1.0.1.r.0.1.0.1.v.2.2.2.2. Metatarsus, p.1.1.1.r.1.1.v.2.2.3. Tarsus, 0. Second leg: Femur, p.1.1.1.1.1.d.1.0.1.0.1.r.1.1.1.1.1. Patella, p.1.d.1.r.1. Tibia, p.0.1.0.1.d.1.0.0.1.r.0.0.1.1.v.2.2.2.2. Metatarsus, p.1.1.1.r.1.1.v.2.2.3. Tarsus, 0. Third leg: Femur, p.1.1.1.1.1.d.1.0.1.0.1.r.1.1.1.1.1. Patella, p.1.d.1.r.1. Tibia, p.0.1.1.d.1.0.1.r.0.1.1.v.2.2.2.2. Metatarsus, p.1.1.1.r.1.1.v.2.2.3. Tarsus, 0. Fourth leg: Femur, p.1.1.1.1.1.d.1.0.1.0.1.r.0.0.1.1.1. Patella, p.1.d.1.r.1. Tibia, p.0.1.1.d.1.0.1.r.0.1.1.v.2.2.2.2. Metatarsus, p.1.1.1.r.1.1.1.v.2.2.2. Tarsus, 0. Palp: Femur, p.0.0.1.0.d.1.1.1.2.r.0.0.1.0. Patella, p.1.d.1.r.1.

Trichobothria are present in an irregular line of 11–13 running the full length of prolatral femora i–iv; some on proximal femora i–iv; some on the prolatral, dorsal and retrolateral surfaces of tibiae i–iv (most numerous proximally); 6–7 on dorsal metatarsi; and 5–6 in a single row and an additional 3–4 distally on tarsi i–iv.

Palp (Figs. 2, 3, Plate 1, B) has a slender, elongate cymbium, not excavated distally. Embolus long and whip-like, supported by the fulcrum distally. The membranous conductor tapers to a tongue which supports the tips of the fulcrum and embolus. The median apophysis arises from the tegulum and is rounded and membranous distally. From the base of the fulcrum a flat club-shaped apophysis, Comstock's (1948) 'lateral sub-terminal apophysis', extends posteriorly and lies against the tegulum; near its point of attachment it has a needle-like projection. A similar sharp projection arises near the base of the embolus. The tibial apophysis is a stout, curved, retrolateral spur arising mid-way along the short tibia.

Variation: The body lengths of 2 other males were 7.3 and 7.8 respectively. There is little variation in pattern and spination.

FEMALE (Plate 1, A): In 1876 Koch described *Dolomedes cerinus* which, from the description, is certainly an immature female *Megadolomedes australianus*. Lamb (1911) described *D. trux* the curved flexible nature of the tarsi is not clearly

from Brisbane; on examination this is found to be a penultimate female *M. australianus*. An immature specimen QM W2146 from the Blackall Range described by Rainbow (1912) as *D. trux* is also *M. australianus*. There is great variability in size and pattern in females as noted by Koch; the spider is figured in Koch (1876, LXXV, 2) though shown. The superior lorum of the pedicel is

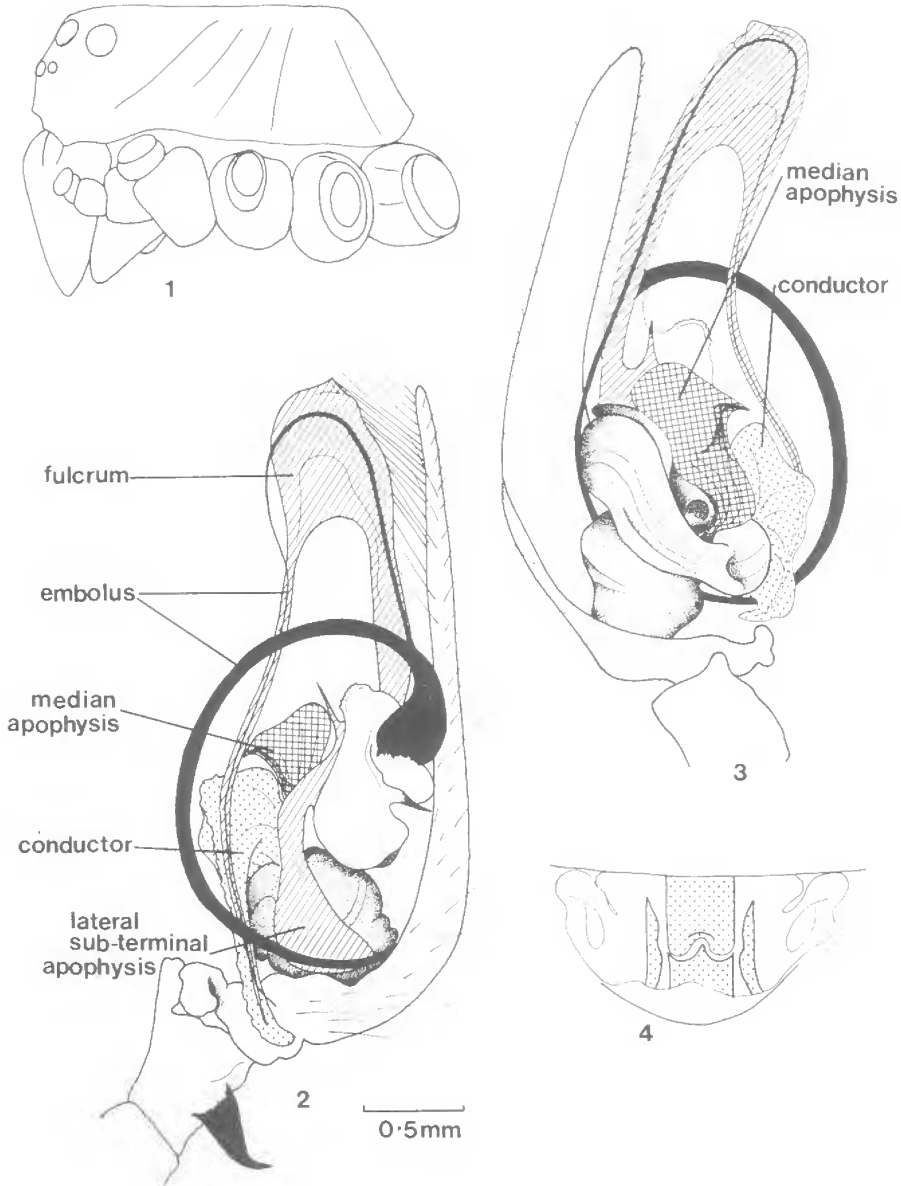


FIG. 1-4: ♂ *M. australianus*. 1, cephalothorax, lateral; 2, palp, retrolateral; 3, palp, prolateral; 4, pedicel with sclerites.

composed of 4 sclerites (Fig. 4). A scopula is present on metatarsi and tarsi of all legs. Epigynum (Figs. 5, 6) has well defined lateral ridges. The long emboli are often found blocking the epigynal ducts of the female (Fig. 7); this gives the epigynum a broader outline than usual. The atrium leads into a long twice-coiled bursa copulatrix to the ovoid spermatheca. From here a thicker, coiled fertilization tube goes to the oviduct.

Variation: Females vary in length from 20 to 30 mm. Five colour patterns may be recognised: 1)

The 'type pattern as illustrated by Koch — light yellowish lateral bands on the carapace and primarily a dark foliate pattern on the dorsal abdomen. 2) The 'uniform' pattern as illustrated by Koch for *D. cervinus* — lateral cephalic bands poorly defined, if present; irregular pigmentation on the abdomen. 3) The 'spotted' pattern — carapace and abdomen brown-black marked with yellow spots. 4) The 'striped' pattern — lateral cephalic bands well defined and dorsal abdomen with a median broad dark band enclosed laterally by yellowish stripes. 5) As in Plate 1, D with more

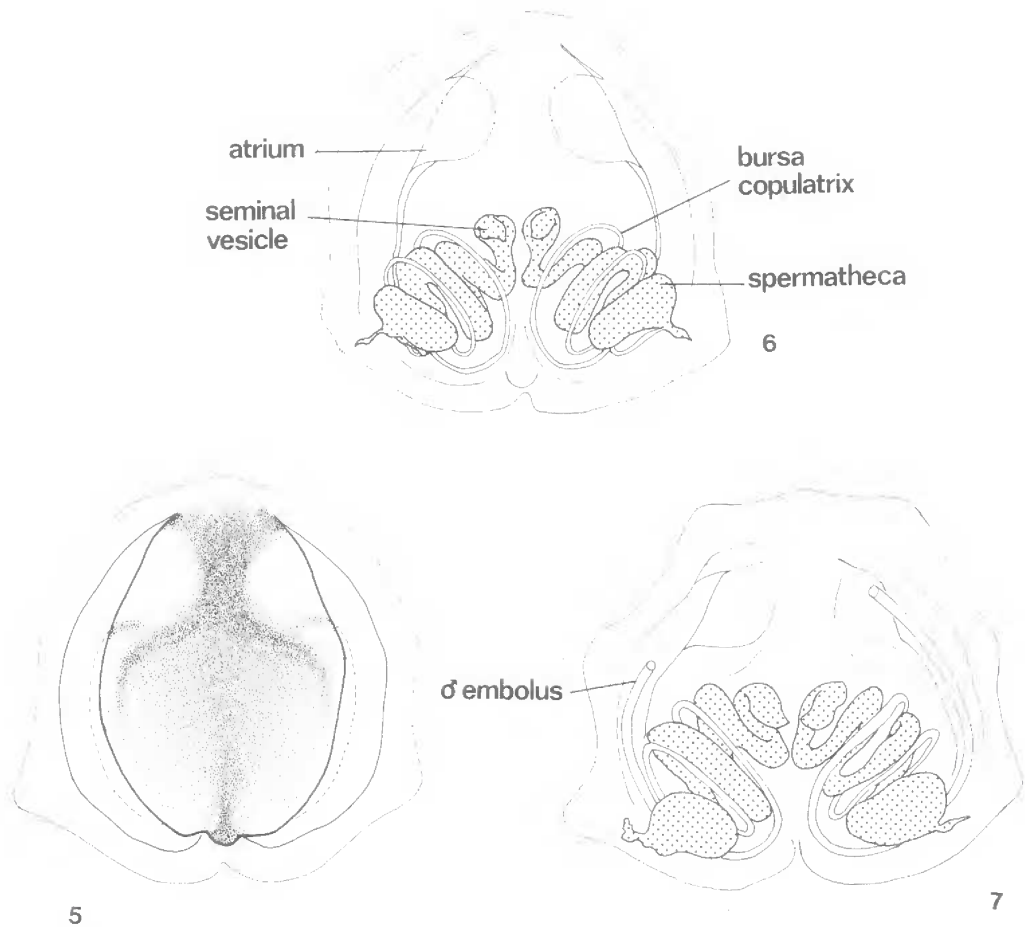


FIG. 5-7: ♀♀ *M. australianus*. 5, external epigynum S233; 6, internal epigynum S233; 7, internal epigynum with emboli in ducts S234.

extensive light areas than in 1). (Figs. 8–12). The presence of two or more patterns occurring together suggests that the patterns are of no ecological significance.

BIOLOGY

Megadolomedes australianus has a round seamless egg-sac which it carries in the chelicerae, with the aid of the palps. Just prior to the emergence of the young the egg-sac is suspended in a loosely constructed nursery in a shrub near the water (Hickman 1967). In the laboratory the young emerged from this 5–6 days later. Females are found throughout the late spring, summer and autumn in areas of still to moderately fast moving water. Males have been found only in early summer (November, December) although penultimate males were found as early as August. Before maturity they are often found high up in vegetation overhanging water. Females show a preference for the underside of logs and branches and flatten themselves if disturbed or they may dive into the water and remain submerged for nearly half an hour (Hickman 1967). In swimming the spider sculls with the second and third pairs of legs while the first and fourth pairs are held outstretched with tips together. In pursuit of prey, females strike the water with all the legs at once, thus bouncing across the water surface. The long flexible tarsi appear to be an adaptation to support the large body on water.

ACKNOWLEDGEMENTS

We should like to thank Dr Gisela Rack who gave the senior author generous access to the collections in the Zoologisches Staatinstitut und Zoologisches Museum during a visit in 1977. Thanks are also due to the Trustees of C.S.I.R.O. Endowment Fund, Canberra for financial support to travel to Europe and to the Interim Council of Australian Biological Resources Study which funded the collecting trip to northeastern Queensland during which specimens of *M. australianus* were collected.

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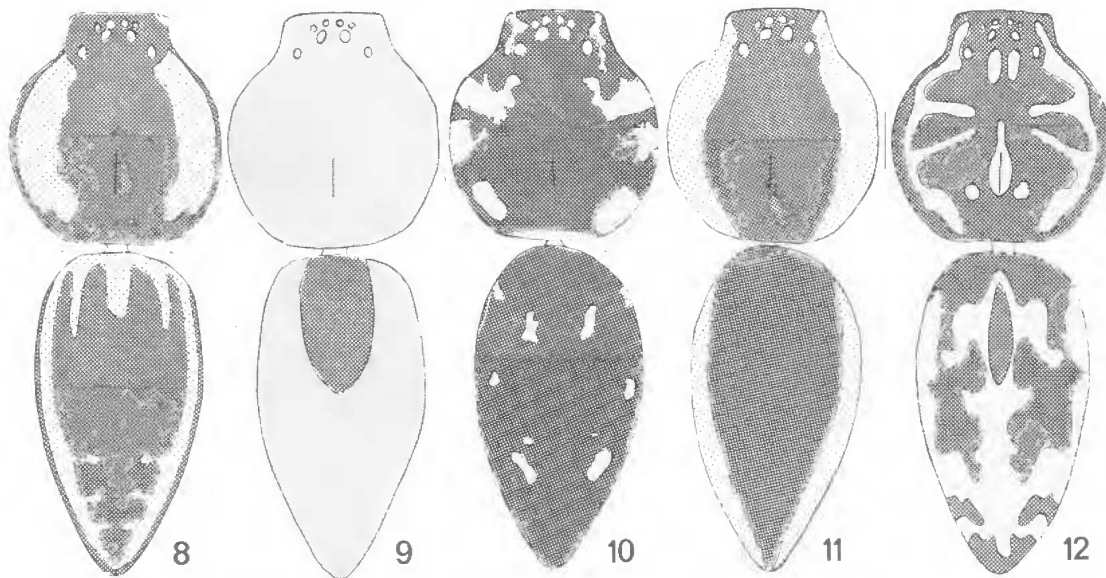


FIG. 8–12: ♀♀ *M. australianus* patterns.

MEMOIRS OF THE QUEENSLAND MUSEUM

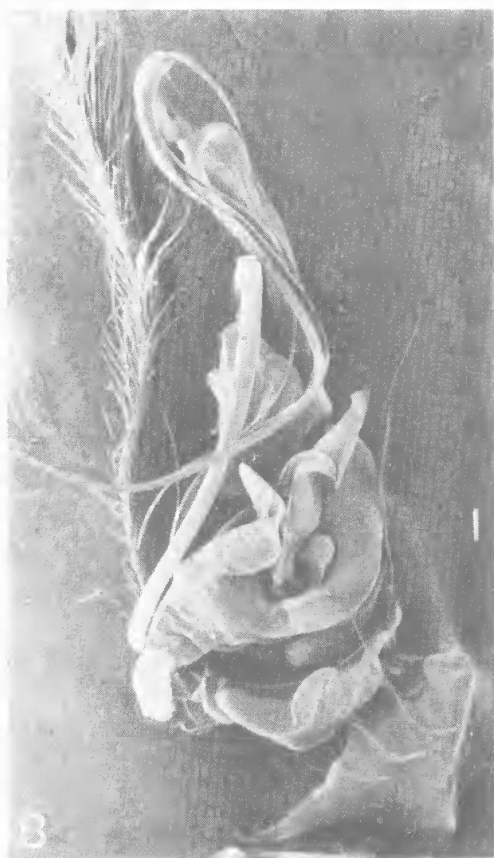
PLATE I

A: ♀ *M. australianus*.

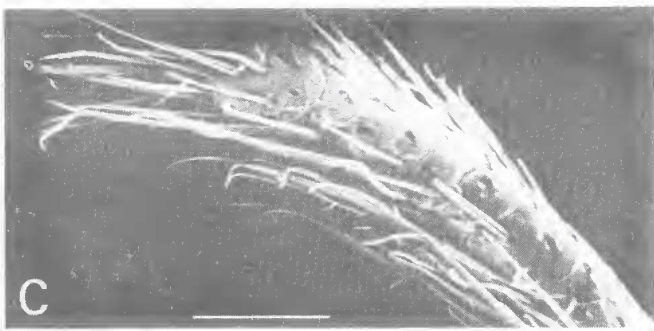
B-D: ♂ *M. australianus*. B, palp, ventral; C, tarsus showing striations;
D, tarsal claws. (Marker = 110_{μ})



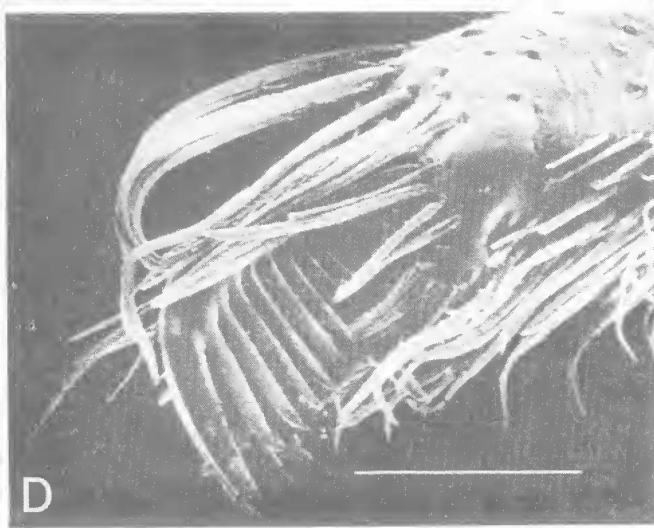
A



B



C



D